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THE SEMANTIC MORPHOLOGICAL CATEGORY OF NOUN NUMBER IN STRUCTURALLY DIFFERENT LANGUAGES

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The article represents structural semantic analysis of the grammatical number of nouns in the Indo-European (English, German), Semitic (Arabic, Hebrew), and Altai (Tatar, Japanese) languages. The category of number comprises numerous phenomena, including some transitive and historical aspects, which complicate and enrich the system of language. Several controversial features of the category may be pointed out, especially those concerning the phenomena of collectiveness, duality, segmentation, etc. The idea of plurality is reflected in the mind of different people in the many-sided way. In the Indo-European languages there are mass nouns that occur only in the singular. Also, there are countable nouns that occur only in the plural. The special attitude of the Semitic languages towards the category of number can be noticed in the formal interpretation of the concept "singularity - plurality". Their graphic style of thinking penetrates the grammar of Arabic and Hebrew and is reflected in the category of number. In Tatar the singular and plural forms are distinguished. There are a lot of number affixes. Japanese does not grammatically differentiate between singular and plural forms. So, the isomorphic and allomorphic traits of the number category reflect universal and unique language verbalization of different cultures, revealing people's world outlook, their traditions and history.

KEYWORDS
quality, quantity, grammatical number, singularity/duality/plurality, segmentation/collective nouns, English/German, Arabic/ Hebrew, Japanese/ Tatar.

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Introduction

The problem of language quantity was searched over by different scholars: I.A. Baudouin de Courtenay, O. Espersen, K. Meiniger, E. Sapir, A. Mostowski, P. Geach, P. Lidström, V. Dressler, E.V. Gouliga and E.I. Shendels, T.P. Lomtev, J. Hintikka, V.Z. Panfilov, Z.Y. Turaeva, J. Barwise, A.A. Kholodovich, I. Pete, S.A. Shvachko, J. Van Benthem, L.G. Akulenko, S.A. Krylov, L. Šarić, E. Keenan, B.Tošović, V. Subich [11, 2014], N. Mingazova, [15, 2014], L. Shangaraeva [11, 2014]. The *object* of our research is structural semantic comparison of the category of noun number in three language families: Indo-European, Semitic and Altai. The Indo-European family is represented by

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English and German, Semitic – by Hebrew and Arabic while the Altai family is studied basing on the means of Tatar and Japanese. As a matter of fact, such comparison is based on the ternary opposition 'singularity/duality/plurality' and 'segmentation/collectiveness'. *Scientific uniqueness* of the work is that the analysis of semantics and structure of grammatical number is conducted on the material of 6 languages. The study is *aimed at* indicating interdependence between language and thought of the compared languages' speakers through allomorphic and isomorphic traits of semantics and means of expression in the languages considered.

The research of language quantity through the category of grammatical number by all means requires a comprehensive approach which presupposes application of different types of linguistic analysis: identifying, logical linguistical, etymological, diachronic, structural, contrastive.

The category of quantity is one of the most abstract categories of modern person's thought. Being a universal logical category, it determines gnosiological existence of humanity, pierces through all sides of human activity from everyday to scientific. The category of quantity, similarly to quality, represents a basic property of objective reality – alongside qualitative distinctness of existence it constitutes its quantitative characteristic. Quantitative characteristic of reality is expressed either by means of approximation (measure) or by definite quantity (number). Henceforth, the quantity of objective reality may be divided into discrete or discontinuous and indiscrete or continuous.

Each language reflects a peculiar manner of world interpretation, which is imposed on all its speakers. Language image of the world is the manifestation of the so-called "philosophy of the nation". The notional category of quantity is the obligatory constituent of any culture, which, in its turn, has universal and unique reflection in different world languages. Every language binds number forms with the noun. It is well expressed by the semantic nature of this part of speech since it reflects quantitative relations among objects. Hence, the number is a grammatical category that expresses correlation among quantitative characteristics of the objects around. Grammatical number represents the notional category of quantity alongside lexical number, namely, the numeral or other parts of speech with quantitative semantics, such as *many, multiple, alone, nothing, repeat,* etc.

Although the distinction between singular and plural numbers exists in many languages, the question of what should be considered singular, dual, plural or indefinite massive proves to have different answers in different language systems. To illustrate this we can take the notion which is denoted in English by the noun *advice,* for instance. In the English language this noun is uncountable and is used only in singular. Unlike English, German possesses both the singular form *der Rat* "a piece of advice", and plural *die Räte* "pieces of advice" with the palatalization of the root vowel. In the Semitic languages this word has singular, plural, and even dual form: Arab. **نَصِيحَة** [nasyikha] "a piece of advice" – **نَصَائِحُ** [nasaaikhu] "pieces of advice (plural)" - **نَصِيحَتَانِ** [nasyikhataani] "two pieces of advice". Heb. יועץ [yoetz] "a piece of advice"–**יועצים** [yoetzim] "pieces of advice (plural)" – **יועציים** [yoetzaim] "two pieces of advice". In the Tatar language, much as it is in German, the plural form of the word *advice* is built up by means of agglutination: *киңәш* [kiŋəsh] "a piece of advice" – *киңәшләр* [kiŋəshlər] "pieces of advice (plural)". Another Altai language – Japanese – does not grammatically differentiate between singular and plural forms, they match,

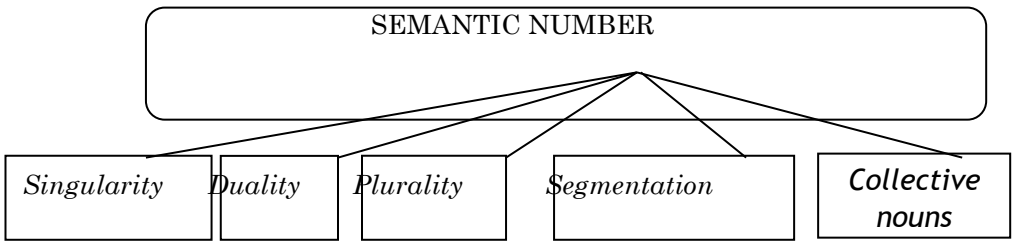
thus, we confront the homomorph 勧告[kankoku] “advice” (both singular and plural). As for dual forms, these do not exist in Tatar and Japanese.

Recapitulating, we may point out that the main grammatical meaning of number in language is expressed through singularity and plurality while some languages possess dual and even triple number [Anokhina, 2012].

The sphere of quantity in different languages, being by all means wide and heterogeneous, overwhelms all the layers of language structure: vocabulary, word formation, morphology, syntax. Language quantity is much more than just lexical and grammatical number, it comprises a lot of transitive phenomena which complicate and at the same time enrich the language system. In some cases different language quantity facts may coexist, contradicting each other to some extent. Such are the Semitic coexisting collective and dual nouns, for instance.

The category of number of nouns may be considered double-base. The first component will be then represented by the ternary opposition singularity/duality /plurality and the second – by the binary opposition segmentation/collectiveness (collective nouns). It is noteworthy that singularity, segmentation and duality are connected with definite quantity while plurality and collectiveness represent indefinite quantity.

Scheme 1. Semantic category of number in the languages considered



1. MATERIALS AND METHODS

The *object* of our research is structural semantic comparison of the category of noun number in three language families: Indo-European, Semitic and Altai. The Indo-European family is represented by English and German, Semitic - by Hebrew and Arabic while the Altai family is studied basing on the means of Tatar and Japanese. As a matter of fact such comparison is based on the ternary opposition 'singularity/duality/plurality' on the one hand and the binary opposition 'collectiveness/ segmentation' on the other hand.

Singularity. Numeric representation of “one” in natural languages is of special interest. Scientists have discovered a link between this numeral and pronouns in many languages. In a number of Indo-European languages (Lat. *ūnus* Goth. *ains,* Prus. *ainan*, Lith. *vienas*, Eng. *one* and others) this numeral is derived from the pronoun *oinos/einos* possibly with the initial meaning “oneself”, “one”. In Arabic the numeral واحد [uaakhid] “one” dates back to the seme “one, single, solitary”. In Hebrew the word אחד [ahad] has the meaning “separately, particularly, one, oneself, alone”. In the Tatar language, the word *бер* [ber] means “one, the only, certain”. In Japanese a part of lexemes «oneself», «alone» is a hieroglyph with the meaning “one”. Based on the above it can be

concluded that at a certain stage of its development, a man began to feel his own «I», his isolation from the outside world. The appearance of the numeral «one» became possible, when a man separated himself from nature [Panfilov, 1977].

In the languages studied the singular is not marked. Quantitative characteristics of the object are additionally supported by the presence of the indefinite article with countable nouns in English: *a table* and the definite article in German: *der Tisch*. In English, the singular is marked in the nouns borrowed from other languages: *cactus* (Latin), *phenomenon* (Greek). In the class of uncountable nouns that do not have the plural, their singular forms are already free of any quantitative values. In this case, in the English and German languages article is usually not used: Eng. *I will drink tea*; Ger. *Ich brauche Geld* "I need money".

In the sphere of the singularity there is also a large number of units that are closer to the plurality, but are used only in the singular. These words form a group called Singularia Tantum. These include material and abstract nouns, proper names, unique objects, some collective nouns. Singularia Tantum is present in all the languages studied except Japanese due to the lack of grammatical number indicators:

Eng. *money, gold, paraphernalia, slop, food, information, equipment, hair.*
Ger. *die Einrichtung* "equipment"*, die Bevölkerung* "population"*, der Schnee* "snow"*, das Geld* "money"*, das Essen* "food"*, das Vieh* "cattle"*, das Obst* "fruit", *das Personal* "staff".

But the English *knowledge* can be used in the plural (*knowledges and skills*) like the German *der Inhalt – die Inhalte* "contents"*, die Information – die Informationen* "information". As for the German *das Wissen* "knowledge", it has only the singular form.

Unlike English the phenomenon Singularia Tantum in Arabic and Tatar is presented by few words: Tat. *җиһаз* [dgihaz] "furniture", *сыйныф* [syinyf] "people in class". Arab. خُبْزٌ [khubz] "bread", صَدَاقَةٌ [cadaaqat] "friendship".

Hebrew has the words of the Singularia Tantum group as well: **שמש** [shemesh] "sun", **אש** [ash] "fire".

However nouns of this group can be used in the plural with the change of lexical meaning. Eng. *cheeses* "different kinds of cheese", Tat. *майлар* [majlar] "different kinds of butter", Ger. Stähle. Arab. أَلْبَانٌ [albaan] "different kinds of milk". Heb. **חלבים** [khalavim] "different kinds of milk".

Plurality. The main means of expressing plurality are the plural forms of nouns. They are the main expressions of 'non-singularity', understood qualitatively indefinitely. Here we can see the idea of a discrete quantity.

In terms of morphology the plurality in the Altai languages is considered to be least developed. So, in Japanese culture in general there is no opposition of singular and plural, because a single object, phenomenon or person is considered to be extremely connected with the totality, sequence, mass, and is not distinguished from them. According to the Japanese outlook, singularity and plurality harmoniously interact and do not have clear boundaries.

The Japanese language has its own noun quantity peculiarities which differ it greatly from other languages considered. It uses the system of archaic suffix classifiers which denote different sets of objects (or even one object). These suffixes are the actual legacy of the times when the human being did not have abstract counting systems, paying attention only to the contents of the counted objects, their general characteristic. Thus, we can point out the following

suffixes: 人 [nin] to count people; さつ [satsu] for books; わ [wa] for birds and hares; 台 [dai] for technical devices,trains; かい [kai] for floors, そく [soku] for shoes and socks; ちゃく [chaku] for coats and jackets; 個 [ko] for small objects: stones, soap bars, apples; 本 [hon] for cylindrical objects, 枚 [mai] for flat objects, etc. Classifiers are used with numerals in preposition 三個のりんご[san ko no ringo] (literally the apple is three) or in postposition りんごが三個 to the noun [ringo ga san ko] (literally three apples).

In Tatar the plural is formed by the suffixes -lar/-lər, -nar/-nər: *йорт* [jort] "house" – *йортлар* [jortlar] "houses", *өстәл* [östəl] "table" – *өстәлләр* [östəllər] "tables", *тукран* [tukran] "woodpecker" – *тукраннар* [tukrannar] "woodpeckers", *рәсем* [rəsem] "painting" – *рәсемнәр* [rəsemnər] "paintings". The agglutination of the Tatar language explains the scarcity of morphological means of expressing plurality. In the case of combinations of Tatar nouns and numerals the latter do not make the noun plural as it happens in Germanic and Semitic languages (5 *өстәл* (singular form) [bish östəl] – five tables).

The Germanic languages follow the Altai ones on a scale of grammatical manifestation of plurality. So, the grammatical plural in English is formed agglutinatively, i.e. using the endings -s/es: *book – books, crash – crashes*; -en: *ox – oxen, child – children*; borrowed words from some languages have preserved the ending of the original language:

-a: phenomenon – phenomena (Greek), datum – data (Latin);
-i: cactus – cacti (Latin),
-ae: formula – formulae (Latin);
-x: bureau – bureaux (French) etc.

Also the plural is formed by changing the internal inflexion: *tooth – teeth, mouse – mice, man – men, brother - brethren.*

In German plural endings, that agglutinatively attached to the word, are: -e: *der Weg* "way" – *die Wege* "ways"; -n/en: *die Blume* "flower"– *die Blumen* "flowers"; *der Kandidat* "candidate" – *die Kandidaten* "candidates"; -er: *der Geist* "spirit, soul" – *die Geister* "spirits"; -s: *der Clown* "clown" – *die Clowns* "clowns", *das Sofa* "sofa" – *die Sofas* "sofas"; -a: *das Visum* "visa" – *die Visa* "visas"; -i: das Solo "solo"– die Soli "solo parts"; -ien: das Fossil "fossil" – die Fossilien "fossils". When the plural is formed some root vowels are softened – this phenomenon is called the Umlaut i.e. the change of the internal inflexion: *das Floss* "ferry" – *die Flösse* "ferries", *die Macht* "might" – *die Mächte* "mights"*, die Kuh* "cow" – *die Kühe* "cows". In addition to these methods there is an analytical way of forming the plural in German: *der Wagen* "wagon" – *die Wagen* "wagons", *der Fehler* "mistake" – *die Fehler* "mistakes". There are suppletive forms of plural in the Germanic languages as well: Eng. *man – people*, Ger. *der Mann – die Leute.*

The Semitic languages follow the Germanic ones on the scale of grammatical manifestation of plurality. In Arabic the plural is formed in two ways: agglutinatively, by adding the suffixes ـُونَ [-uuna] (Human Sound Masculine Plurals): مُعَلِّمٌ [mu'llim] "a teacher" مُعَلِّمُونَ [mu'llimuuna], "teachers" ـَات [-aat] (Human Sound Feminine Plurals): مُعَلِّمَةٌ [mu'allima] "a teacher" مُعَلِّمَاتٌ [mu'allimaat] "teachers", and inflexionally, changing the internal inflexion: رَجُلٌ [radzulun] "*man*" – رِجَالٌ [ridzaalun] "*men*").

Hebrew is also rich in means of expressing plurality formed by the internal and external inflections.

There are two plural endings in Hebrew that are added to the root (the stem) of singular nouns: **ים**-[im] – regular for masculine nouns and irregular for feminine, or **ות**-[ot] – regular for feminine nouns and irregular for masculine [Rakovskaya, 2011].

Masculine singular nouns usually are not marked and, as a rule, they form their plural either by the regular ending ים [im]: **תַּלְמִיד** [talmid] "pupil - masculine" – **תַּלְמִידִים** [talmidim] "pupils - masculine", or by the irregular ending **ות**-[ot] –: **כִּיסֵא** [kisə] "a chair" – **כִּיסְאוֹת** [kisaot] "chairs".

Feminine singular nouns usually have the gender endings **ה** [a] or **ת** [t] which are changed either to the regular ending **ות**-[ot] in plural: **תַּלְמִידָה** [talmida] "pupil - feminine" – **תַּלְמִידוֹת** [talmidot] "pupils - feminine", or to the irregular ending ים [im]: **שָׁנָה** [shana] "a year" – **שָׁנִים** [shanim] "years".

The words of Aramaic origin can have the ending ין [in]: קידושין [kiddushin] "kiddushin", גירושין [girushin] "divorce".

Moreover there are changes of internal inflections in the plural forms influenced by the shift of stress and the singular noun ending: ספר [səfər] "a book" – ספרים [sfarim] "books", קטע [kəta] "a part" – קטעים [ktaim] "parts", טעות [taut] "a mistake" – טעויות [taujot] "mistakes", כוכבית [kohavit] "a star" – כוכביות [kohavijot] "stars", תזמורת [tazmorət] "orchestra" – תזמורות [tazmorot] "orchestras". The word בית [bait] "a house" that has the plural form תיבב [batim] "houses" is considered to be one of the exceptions. In contrast to Arabic the changes of internal inflections in the plural forms in Hebrew occur simultaneously with adding the plural masculine or feminine ending.

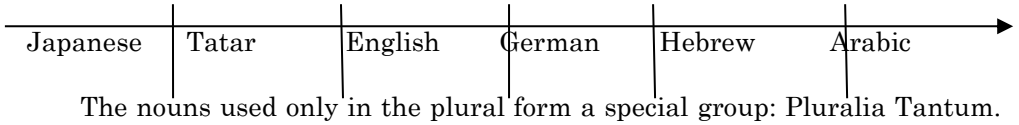
The Semitic languages, namely Arabic and Hebrew are the richest in means of expressing plurality among the languages studied. The internal inflexion is a phenomenon that joins the Indo-European and Semitic languages. As Mishkurov notices, "one of the reasons of connecting the Indo-European and Semitic languages in the group of the inflected languages was a very strong opinion about the presence of the phenomenon of "internal inflexion" in both language families – "the miraculous property of the root", as the linguists said at that time" [Mishkurov, 1985].

So, grammatical manifestation of plurality in the languages compared can be presented in the following way (scheme 2):

Scheme 2. Morphological manifestation of plurality

Low

High



The nouns used only in the plural form a special group: Pluralia Tantum. In English and German this group is represented by the nouns denoting the pair of objects ("twofold" items) and summation plurals (sometimes called the collective nouns, rising beyond numbers), consisting of several inseparable parts: Eng. *jeans*, *pants*, *pyjamas*, *scales*, *scissors;* Ger. *die Hose* "trousers", *die Schere* "scissors", *die Waage* "scales", *die Brille* "spectacles". Unlike German «paired» nouns the English ones are stable. According to the English grammar standards it is impossible, for example, to form a single *pant* from *pants*. In some situations, however, such use occurs. For example, manufacturers often use "a pant" in the meaning of "one pair of pants". In German the nouns of the group Pluralia Tantum have two number forms, singular and plural: *die Schere* – *die*

Scheren "scissors"*, die Hose – die Hosen* "trousers", *das Tor – die Toren* "gates", *der Schlitten – die Schlitten* "sledge", *die Waage – die Waagen* "wagons", *die Brille – die Brillen* "spectales". This group conveys the main content of collective nouns as a unity in plurality, as parts of this object cannot exist separately and are considered in general as a single object as it really is; it is the "internal plurality". The meaning of the singularity is expressed by the phrase Eng. *a pair of*, Ger. *ein Paar*. Many authors note that the nouns of this group easily take the indefinite article, which emphasizes the singularity, for example *a silver scissors* in English.

However, one and the same subject in different languages is not always perceived as a pair, consequently, the form of Pluralia Tantum might be lost: for example Eng. *binoculars* (plural) but Ger. *das Fernglas* (singular); Eng. *rake* (singular) but Ger. *die Harke* (plural); Eng. *compasses* (plural) and Ger. *der Zirkel* (singular).

The Arabic and Tatar nouns denoting paired items, or items, consisting of two parts, unlike those in English and German, have their singular and plural forms: Arab. **نَظَّارَة** [nazzaarat] - **نَظَّارَات** [nazzaaraat], Tat. *кайчы(лар)* [kajchy-lar] "scissors".

In Hebrew nouns, denoting a pair of subjects and objects, consisting of two identical halves either have the singular and dual forms like: **מִכְנָס** [mihnas] "a leg of trousers" – **מִכְנָסַיִם** [mihnasaim] "trousers", or the dual form only: **משקפים** [mishkafaim] "spectacles".

In the form of Pluralia Tantum the English names of sciences and some illnesses are used: *mathematics, physics, measles, mumps*. The same applies to German: *die Pocken* "pox", *die Masern* "measles". However, the names of sciences have the feminine singular form: *die Physik*, *die Mathematik*.

Some linguists believe that the nouns – the names of a number of sciences and diseases have plural due to the lexicalizing of the plural suffix. This is confirmed by the historical facts: *-ics* is an altered form of the Greek suffix *-ikos* borrowed into Latin and later into French, and then into the English language. From 1660 the form with *-ics* was adopted for the names of sciences and various types of human activities. However, the English nouns *news*, names of sciences and some illnesses are always used with the singular meaning [Mingazova, 2005].

The Pluralia Tantum group includes some English nouns of collective meaning (objects of a certain set of units): *clothes*, *contents*, *proceeds, lodgings, goods, foundations, traffic-lights, stairs.* There are fewer nouns of Pluralia Tantum in German, though there are a lot of collective nouns there: *die Ferien "vacation", die Lebensmittel* "goods", *die Möbel* "furniture", *die Finanzen* "finances", *die Immobilien* "immovable property", *die Spesen* "costs", *die Geschwister* "brothers and sisters".

In Arabic some items, representing a group of units, also belong to this group: **مأكُولاتٌ** [ma'kuulaat] "foodstuffs", **أوَانٍ**[auuaani] "utensils", **مُثَقِّلاتٌ** [musakkilaat] "weights".

In Tatar the Pluralia Tantum group can be noticed as well: *яшьләр* [jəshlər] "youth", *олылар* [olylar] "elderly".

In Hebrew there are some masculine nouns used only in plural: **מאמצים** [maamatsim] "suffering", **נדודים** [nadodim] "wandering", **נעורים** [naorim] "youth".

Some words of Aramaic origin also belong to the Pluralia Tantum group: קידושין [kiddushin] "kiddushin", גירושין [girushin] "divorce".

The meaning of plurality prevails in the semantics of the words of this group, which is connected with the fact that the language reflects the anthropocentric picture of the world and is connected with the human perception of different phenomena. This perception is specific, in general, at the level of people and traditionally determined. This explains a number of similarities and differences in linguistic structure of one and the same phenomenon of the surrounding reality. It is collective nouns that represent the most ancient types of indicating quantity (the archaic opposition of singular and collective nouns) and have the original function of expressing plurality.

Plural forms tend to be ousted by singular forms in the nominative function to denote the generalized concept of the substance and the tendency of predominant use of material names in the singular takes place. In the same period the process of forming the Pluralia Tantum words continues, which, obviously, started in the epoch before writing appeared.

Duality. Besides the singular and plural numbers, some languages possess the grammatical dual number. Duality presupposes the peculiar morphological manifestation different from the plural, which is used to denote a pair of objects or phenomena. The dual number used to exist in almost all ancient languages, but in many of them (such as Indo-European languages) it died out. The dual forms either became nonexistent or were used as plural forms. In some cases the forms of duality ousted plural forms, regaining their functions. Some linguists (D.Astrauskaite, A.Steponavicivis) stick to the opinion that the dual number is a subdivision of the plural, hence it can not be considered equal to the singular and plural. They think that the dual and plural forms are in synonymic relations to each other. The same can not be said about the singular and dual number [Mingazova, 2005, p.41]. It proves Greenberg's implication that a language with morphology for dual number will also have plural morphology but not the other way around [Harley, 2002]. It should be noted, however, that in some languages both dual and plural forms are nonexistent. As Lewis Gebhardt points out: "…some languages have plural, some dual, some both and some neither, contrary to Greenberg's observation that a language with dual must have plural. That is, we want the feature organization to rule out some nonoccurring paradigms [Gebhardt, 2009]. Japanese may be given as the example of such languages.

As for the dual number in Arabic, for instance, it proves the fact that the grammatical category of number was developing gradually from lower abstraction to higher abstraction parameters, overcoming reluctance of lexical material. The renowned Arabist scholar, semitologist, professor B.M. Grande, having studied and compared some Semitic and Hemitic languages, made a conclusion that the dual appeared as the result of language evolution. He writes: «The dual number is fully developed only in the Arabic language… The dual number form seems to appear in the Semitic languages in the earliest epochs and was initially used only to denote the twin body parts. The tendency to compose special forms for the grammatical duality, probably, goes back to the period when the Semitic languages were not yet an independent language group…" The scholar also adds that "originally people denoted different

directions according to man's body parts. Thus, Arab. يَدَانِ [jadaani] means "two arms", denoting "the arm direction"… and so on" [Grande, 1998].

Analyzing the dual number in Arabic, Sh.Z. Babakhanov refers to the opinion of some European scholars who connect the loss of the dual with the progress of the civilization. Thus, J. Vendryes's disciple, A. Meillet, notes: "… Arabic had been the language of underdeveloped nomads up to the VIIth century. That's why the dual number was preserved in the noun, pronoun and verb. So, in the case of the Arabic language we can state that the degree of Arabic culture development is determined by the preserved dual number". The French encyclopedia "Larousse" claims that civilized languages do not possess the dual number; the duality phenomenon in general is the property of such uncivilized or unbettered languages as Arabic. Babakhanov rightfully rejects such views. He writes: "Preservation of the dual number in the Arabic language cannot be connected with deficiency or underdevelopment of the language. The existence of duality in the Arabic language did not hinder the development of more abstract plural. This is due to cultural and historical reasons which conduce the existence of Arabic literary norms, arising as early as the VIth-VIIth centuries" [Babakhanov, 1973].

We assume that the dual number forms, which still exist in Arabic, may well illustrate the fact that among all Semitic languages the Arabic language alone has been demonstrating the stability of its grammatical structure up to the present days. It is confirmed by the book of Koran which has seen very scarce change for 300 years since its first editing. The Arabian philologist, D.V. Frolov, points out that "as an integral philological work with its fixed structure and text, the Koran represents the result of text editing, performed by the first generations of Arabian scholars. It is the source of first philological knowledge which appeared as part of syncretical Arabian-Muslim lore" [Frolov, 2006]. The presence of the dual number in Arabic by all means underlines the importance of "the pair" in the process of life evolution.

In Hebrew there are a lot of nouns, in which the dual ousted the plural. In these cases the dual form represents plurality; it is built up with the inflexion **יים** [aim]. The dual is used to denote:

□□paired body parts: **גַּפַּיִם** [gafaim] "two extremities". The words **שֵׁן** [shən] "a tooth" and **רגל** [ragl] "a foot", **צִיפּוֹרֶן** [tsiporən] "a nail" have the dual form instead of the plural: **שִׁינַיִם** [shinaim] "teeth", **רגליים** [raglaim] "feet", **צִיפּוֹרְנַיִם** [tsipornaim] "nails" since the teeth, for example, are arranged in pairs on both jaws as well as from both sides.

□□ a pair of subjects and objects, consisting of two identical halves that either have the singular and dual forms like: **מַגָּף** [magaf] "a boot"– **מַגָּפַיִם** [magafaim] "boots", or the dual form only: **משקפים** [mishkafaim] "spectacles", **מאזנים**[maaznaim] "scales";

□□some temporal nouns, having all number forms: **פַּעַם** [paam] "time" - **פַּעֲמַיִם** [paamaim] "two times, twice" – **פְּעָמִים** [paamim] "times".

□the nouns, having only the dual form: **מַיִם** [maim] "water", **שָׁמַיִם** [shamaim] "sky". Although we are not talking about two subjects or subjects paired – this fact is explained by the philosophical and religious reasons.

The Old English language also possessed the form of dual number. The declension system of pronouns, for instance, had the forms for one person, two persons and the quantity of more than two. During history the grammatical dual was lost. In modern English duality is expressed by the adjective-pronoun *both*

and nouns *brace, yoke, couple*, *span, pair*. So, this category has lexical representation. H. Whitehall illustrates "the lexical dual number" with the following examples: *a pair of ducks*, *both ducks* (Cit. by Mingazova, 2005, p.45).

The compared languages form dual forms with the numeral "two": Tat. *ике як* [ike jak] "both sides", *ике алма* [ike alma] "a couple of apples"; Jap. 二人とも [futaritomo] "both (for people)" and 二つとも [futatsutomo] "both (for things)". Eng. *two students*, Ger. *zweimal* "two times". As for the numerals اِثْنَانِ [isnaani] "two - *masculine*"; اِثْنَتَانِ [isnataani] "two - *feminine*" in Arabic and שְׁנַיִם [shnaim] "two - *masculine*" и שְׁתַּיִם [shtaim] "two - *feminine*" in Hebrew, they are used without nouns, though the combination "numeral+noun" is possible: Arab. طَالِبَانِ اِثْنَانِ [taalibaani isnaani] "two students - *masculine*", طَالِبَتَانِ اِثْنَتَانِ [taalibataani isnataanii] "two students - *feminine* ". Heb. שְׁנֵי בָנִים [shnəj banim] "two boys", שְׁתֵּי בָנוֹת [shtəj banot] "two girls". In Hebrew the numeral "two" in combinations with nouns has specific forms.

So, the ternary opposition 'SINGULARITY/DUALITY/PLURALITY' has both allomorphic and isomorphic ways of the number representation in Indo-European, Altai and Semitic languages. Singularity and plurality in English and German are expressed by agglutination, inner flexion and analytical means (articles). The interaction of singularity/plurality is also manifested in the groups 'singularia tantum/pluralia tantum'. The Altai – Tatar and Japanese – possess fewer grammatical representations of the 'singularity/plurality opposition'. The Tatar language has only few agglutinative markers of plurality with some examples of singularia and pluralia tantum, whereas Japanese does not have grammatical number forms at all. Arabic and Hebrew have the most widespread system of singularity/plurality forms, comprising agglutination and numerous means of inflexion both external and internal. Grammatical duality is registered also only in Hebrew and Arabic while the Germanic and Altai languages are not marked grammatically – we can see only lexical indicators.

The second component of the semantic category of number is the opposition of segmentation/collective nouns. Division into a set and its segment in a varying degree is present in all of the languages.

Collective nouns. The category of collectiveness – a conceptual category that expresses the interpretation of a set as a whole, indivisible set of similar items. For example, Eng. *humanity,* Ger. *Menschheit* [menghait], Arab. شَعْبُ [sh'bun], Heb. עם [am], Tat. *халык* [khalyk], Jap. 人類 [jinrui].

As it can be seen, the collective name is always followed by some kind of discrete objects that are at least potentially available to be counted. These names express the general name and the separate name at the same time. For example, the word "people" expresses a great number presented by individuals. However, in contrast to the pure category of number, the category of collectiveness reflects not so much quantitative as qualitative aspects (homogeneity) of the set of objects and is based on the opposition of "one thing - a class set of homogeneous objects." So collectiveness is closely related to the quality classification of denotations that presumably explains, for example, an abundance of collectivity suffixes in the history of the Turkic people.

In the Semitic languages collective names back to the abstract names, and historically broken plurality is formed by the collective names. It proves the formation of collective names by changing internal inflection. Collective name in Arabic indicates the group and can function in the singular number and the

plural number. Collectivity has a wide coverage of the words in Arabic. It is used in the singular, forms the plurality and the singularity, from which, in turn, the plural is formed: نَحْلٌ [nakhl] "bee" (collective meaning) - نَحْلَةٌ [nakhlat] "a bee" - نَحَلاَتٌ [nakhalaat] "bees".

As for the collectiveness in the Germanic languages, it is primarily the semantic category, which finds its expression at the level of morphology by prefixal-suffixal derivation. Collective names in the old Germanic languages reflected, firstly, the general idea of plurality, and secondly – which is one of the important features, its semantic characteristic – pointed to the indefinite number of concrete objects a set of which is called a collective noun. The specificity of collective nouns in modern English and German is their ability to detect syntactically two meanings: a unifying and dividing collectivity; it follows that it is always an indivisible unity which is plurality at the same time. Collective nouns have the meaning of the internal plurality.

Collectiveness in Germanic is usually expressed by suffixes and semi suffixes:

Table 1. Morphological formation of English-German collective nouns

English	The suffix -dom	stardom, martyrdom
	The suffix -age	wordage, leverage
	The suffix -hood	priesthood, brotherhood
	The suffix -ry	soldiery, scenery, crockery, jewellery
	The suffix -gy	clergy
	The semi-suffix -ware	kitchenware, hardware, software
German	The suffix -schaft	die Studentenschaft "studentship", die Barschaft "cash"
	The suffix -tum	das Menschentum "mankind", das Bauerntum "peasantry", das Rittertum "chivalry"
	The semi-suffix -zeug	das Steinzeug "pottery", das Rüstzeug "tools, equipment", Jagdzeug "hunting tools", Kroppzeug "little children, small fry"
	The semi-suffix -werk	das Buschwerk "brushwood", Wurzelwerk "worts", Takelwerk "gear", Lederwerk "leather things"
	The semi-suffix -gut	das Wortgut "wordage", Pflanzgut "greenery, vegetation"
	The semi-suffix -volk	das Kindervolk "children", das Frauenvolk "women".
	The prefix -ge	das Gebirge "mountains", das Gebäck "baked things", das Gebüsch "brushwood", das Gepäck "luggage", das Gerede "rumours", das Gerüst "scaffold", das Gespött "pranks".

The generalizing function of article is also used to denote collectivity in the Germanic languages: Eng. *The Ussurian tiger is in danger*. Ger. *Der Ussuri Tiger ist in Gefahr*.

In Japanese collective nouns can be formed by means of:
1) affixation: prefixal問題 [mondai] “a problem” – 諸問題 [shomondai] “problems”;
suffixal 学生 [gakusei] “a student” – 学生たち [gakuseitachi] “ the students”, 友 [tomo] “a friend” – 友達 [tomodachi] “friends”, 僕 [boku] “I” – 僕ら [bokura] “we”, 殿[tono] “master” – 殿原 [tonobara] “masters”, 犬[inu] “a dog” – 犬ども[inudomo] “dogs”.
2) replication: 人 [hito] “a man” – 人々 [hitobito] “men”, 国 [kuni] “a country” – 国々 [kuniguni] “countries”.

The phenomenon like the Japanese replication exists in another Altai language – Tatar – as well. One of the features of the Tatar language, as R.A. Yusupov denotes, is a significant number of paired nouns derived from synonymous pairs and the second component of these nouns is an outdated or a dialect word, for example: *савыт-саба* [savyt-saba] “utensils” (*саба* in Kazakh still means special utensil for kumys), *кыз-кыркын* [kyz-kyrkyn] “girls” (*кыркын* in ancient times meant *bondmaid, neif), бала-чага* [bala-chaga] “kids” (*чага* in the modern Turkmen means *a child*) and so on. In the Tatar language, there are also paired words of Arab-Persian origin, the components of which are in synonymic cohesion, for example: *хәбәр-хәтәр* [həbər-hətər] “news”, *кәеф-сафа* [kəef-safa] “oblectation” and so on [Yusupov, 1980]. Among paired nouns paired antonyms may be found: *ата-ана* [ata-ana] “parents (lit.: father-mother)”, *керем-чыгым* [kerem-chygym] “income-costs”, *этле-мәчеле* [etle-məchele] “in an unfriendly way (lit.: like a dog and a cat)” and replications with the second component, being phonetically changed: *малай-шалай* [malaj-shalaj] “boys”, *тимер-томыр* [timer-tomyr] “iron”.

In the Tatar language grammatical formation of collective nouns is suffixal:
-лык/-лек: *халык* [khalyk] “humanity”, *терлек* [terlek] “cattle”, *каенлык* [kajenlyk] “birch forest”, *җиләклек* [dgiləklek] “berry field”;
- кым/-кем: *төркем* [tőrkem] “a head of”;
- ыр/-ер: *өйер* [őer] “a *shoal of*”.

Classifying nature of the collectivity emerges in its lexical indicators such as: *herd of cows, flock of sheep, shoal of fish, swarm of gnats* in English which differ in the type of grouping denotations.

This classifying nature of the category of collectivity is found in all studied languages and is reduced to the model $K^{N\ Class.} + A^{N.}$ (the kernel element is represented by a noun classifier while the adjunct is a regular noun which can be counted). Thus in English, this model is expressed analytically by the preposition of: *a bevy of quail, a covey of partridges, a gaggle of geese, a gam of whales, a pack of dogs or hyenas, a pride of lions.*

In German analytical method is also possible to form analogical combinations: *Meute von Hunden* “a pack of dogs” – however synthetic method proves to be more productive: *die Hundemeute, das Wolfsrudel* “a pack of wolves”, *der Rabenschwarm* “a flock of ravens”, *die Spatzenschar* “a flock of sparrows”, *der Kranichzug* “a flock of cranes”, *der Bienenschwarm* “a swarm of bees”, *die Hammelherde* “a flock of sheep”.

Such combinations are formed analytically in the Semitic languages as well:

Arab. **سِرْب مِن طُيُور** [sirb min tujuur] “flock of birds”, **سِرْب مِن سَمَك** [sirb min samak] “shoal of fish”, **قَطِيع مِن حَيل** [qatyj’ min khajl] “herd of horses”, **قَطِيع مِن بَقَر** [qatyj’ min baqar] “herd of cows”.

Heb. **להקת ציפורים** [lahakat tziporim] “flock of birds”,
עדר של פרות[eder shel parot] “herd of cows”,
עדר הסוסים[eder hasusim] “herd of horses”,
להקה של דגים [lahaka shel dagim] “shoal of fish”.

In the Altai languages, as well as in German, analytical and synthetic means of expressing the above mentioned model of collectivity are traced:

Tat. *сыер көтүе* [syjer kőtye] “herd of cows”, *ат көтүе* [at kőtye] “herd of horses”, *кошлар төркеме* [koshlar tőrkeme] “flock of birds”, *балыклар өере* [balyklar őere] “shoal of fish”, etc.

Jap. 魚群 [gyogun] “shoal of fish”, 興行団 [kōgyōdan] “troupe of actors”, 群島 [guntō] “cluster of islands”. In Japanese the combination of the genitive particle is also quite often found – の [no]: 犬の群れ [inu no mure] “a pack of dogs”.

Segmentation. Derivatives phrases – segmentators – are used for the expression of segmentation in these languages. In English, the indefinite article gives the seme of singularity to these collective nouns: *a blade of grass*, *a piece of iron*, *a piece of furniture, an item of news, a lump of sugar, a chunk of bread.* Moreover the use of the indefinite article may completely change the meaning of a noun (*work – a work, paper – a paper, wood – a wood*), and point to the singularity (*I have a Ford, a Gauguin; to have a good time, a fear of being old).* The indefinite article also has the seme of singularity: *the water in the bottle, the work to be done* [Antrushina, 2001].

Unlike English, segmentation in German happens synthetically: *die Hose* “pants” – *das Hosenbein* “a pant leg”, *das Kraut* “grass” – *das Kräutlein* “a grass blade”, *der Holz* “wood” – *das Holzstück* “a piece of wood”, *die Schokolade* “chocolate” – *die Schokoladentafel* “a chocolate bar”. However, there are constructions with segmentators: *Blatt* “sheet”, *Stück* “item”, *Paar* “pair”: *ein Blatt Papier* “a sheet of paper” , *zwei Paar Handschuhe* “two pairs of gloves” [Fleischer, 1993].

In Japanese, the analytical structure is dominating: パンの一切れ[pan no ikkire], 練り歯磨きのチューブ[neri hamigaki no chūbu] “a toothpaste tube”, 霰の粒[arare no tsubu] “a hailstone”, but there are also examples of compounding: 紙切れ [kamikire] “a piece of paper”, 砂粒 [sunatsubu] “a sand grain”. In Japanese, due to the lack of grammatical number, there are a lot of nouns with zero segmentation, for example, 家畜[kachiku] “a domestic animal” – 家畜[kachiku] “cattle”, じゃがいも [jagaimo] “potatoes” – じゃがいも [jagaimo] “a potato”, 人参 [ninjin] “carrots” – 人参 [ninjin] “a carrot”.

Zero segmentors are also found in German: *das Gerät* “a tool and kitchenware”, *das Gebirge* “a subsurface rock and mountains” [Sheveleva, 2004].

In Tatar segmentation is expressed by suffixes *-ча [cha]/-чә [chə]: сабак* [sabak] “stem” - *сабакча* [sabakcha] “petiole”, *орлык* [orlyq] “seed” – *орлыкча* [orlyqcha] “achene”, *төк* [tők] “hair” – *төкчә* [tőkchə] “a hair”.

Analytical segmentators are widely used: *валчык* [ualchyk] “crumb” - *ипи валчыгы* [ipi ualchygy] “a crumb of bread”, *кисәк* [kisək] “piece, slice” - ипи

кисәге [ipi kisəge] “a slice of bread”, *бөртек* [bőrtek] “grain” – [salam bőrtege] “a straw”.

In Semitic languages in general and in Arabic in particular the formation of segmental indicators of collective nouns happens morphologically with the help of the ending [at] which is analytically added to a word: تِبْنٌ [tibn] “straw” – تِبْنَةٌ [tibnat] “a straw”, بَذْرٌ [bazr] “seed” – بَذْرَةٌ [bazrat] “achene”. Analytical segmentators are used as well: قِطْعَةُ خُبْزٍ [qyt’atu hubzin] “a slice of bread”, شَرِيحَةُ لَحَمٍ[sharijkhatu lakhamin] “a piece of meat”.

The given examples indicate both the unique and the unified nature of collective-segmental names in genetically and structurally far languages. Linguistic meaning of opposition 'SEGMENTATION/COLLECTIVE NOUNS', due to the general properties of human thought, is inherent in all languages, regardless of their typological differences. However there are unique grammatical patterns in the Germanic and Altai languages. The English and German languages have article manifestation of collectiveness and segmentation; Tatar and Japanese both form collective nouns with the help of replication (repetition).

RESULTS

The notional category of quantity reflects one of the most common properties of quantitative certainty of being. It is verbalized differently in languages, forming the semantic category of language quantity, the basis of which being the grammatical category of number. The analysis of the grammatical number of nouns in the Germanic, Altai and Semitic languages allows us to conclude that it is formed by two main components – the ternary opposition ‘singularity/duality/plurality/’ and the binary opposition ‘collectiveness/segmentation’. These two oppositions are represented by isomorphic and allomorphic means of expression in the languages considered with the allomorphic dominating over isomorphic.

Thus, all the languages under study universally express only segmentation. Analytical segmentators are found in the Germanic, Altai and Semitic languages. All other parameters have diversified distribution depending on language family or separate language itself. For instance, grammatical singularity is not marked in Altai and Semitic languages whereas Germanic articles mark singular objects in English and German. The idea of plurality is verbalized in different ways in the compared languages, however agglutination is an isomorphic trait in all of them but Japanese where there is no grammatical difference between singularity and plurality. Inflection is a distinctive plurality feature of Semitic and Germanic languages while German also possesses analytical means and Hebrew – the means of external inflection. Duality is the prerogative of Semitic languages, the other languages considered have nothing but lexical means, indicating dual objects.

Collective nouns are formed using affixes in the Germanic and Altai languages; Hebrew and Arabic have analytical classifiers. English and German are united in the aspect of article use to denote collectiveness while Tatar and Japanese possess the similar phenomenon of replication.

In some cases isomorphic features are registered between languages of different families whereas languages of the same family may have completely different forms of representation of the same phenomenon. To illustrate this we

may point out synthetic classifiers and segmentators in German and Japanese. (See the table 2).

Table 2. Representation of semantic category of grammatical number in Germanic, Semitic and Altai languages.

Language	Singularity	Plurality	Duality	Collective nouns	Segmentation
English	Indefinite article	Agglutination Inner inflexion	Lexical indicators	Affixation Suppletive forms Definite article	Analytical segmentators
German	Definite article	Agglutination Inner inflexion Analytism	Lexical indicators	Affixation Synthetic classifiers Definite article	Analytical segmentators Synthetic segmentators Zero segmentators
Arabic	-	Agglutination Internal inflexion	Agglutination	Lexical indicators Analytical classifiers	Affixation Analytical segmentators
Hebrew	-	Agglutination Internal and external inflexions	Agglutination	Lexical indicators Analytical classifiers	Analytical segmentators
Tatar	–	Agglutination	Lexical indicators	Affixation Repetition Analytical classifiers	Affixation Analytical segmentators
Japanese	–	–	Lexical indicators	Affixation Replication Synthetic and analytical classifiers	Analytical segmentators Synthetic segmentators Zero segmentators

CONCLUSION

The category of number is multi-component. The article is focused on establishing specific peculiarities of its main components in languages of different structure. Representation of these components is characterized by a set of isomorphic and allomorphic language units, e.g. agglutination – replication.

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References

Anokhina, S.P. (2012). Comparative typology of German and Russian. Moscow, 208 p.

Antrushina, G.B. (2001). Lexicology of the English language. Moscow, 288 p.

Babakhanov, Sh.Z. (1973). The category of number in Arabic. Moscow, P.19.

Fleischer V. (1993). Word formation in German. Leipzig, 361 p.

Frolov D.V. (2006). Arabic philology: grammar, versification, koranovedenie. Moscow, P.185.

Gebhardt, L. (2009). Numeral Classifiers and the Structure of DP. EVANSTON, ILLINOIS PhD dissertation, P.95.

Grande, B.M. (1998). Arabic grammar course. Comparative-historical Approach. (2nd ed.). Moscow: Oriental Literature, Russian Academy of Sciences, P. 308-310.

Harley, Heidi and Ritter, Elizabeth. (2002). Person and number in pronouns: a feature-geometric analysis. Language 78:3, P.483.

Mishkurov, E.N. (1985). Typology of dialectal and literary grammatical structure of Modern Arabic. Dissertation for Doctor's degree. Moscow, 467 p.

Mingazova, N.G. (2005). The number category of nouns in English and Arabic. Kazan, 164p.

Mingazova, N.G. Subich V.G., Shangaraeva L.F. (2014). The verb-noun agreement in English and Arabic. Journal of Language and Literature 2014; 5(2), 43-50. DOI: 10.7813/jll.2014/5-3/8.

Panfilov, V.Z. (1977). Philosophical problems of linguistics. Moscow, P.287.

Rakovskaya, I. (2011). The morphology in Hebrew. The practical grammar. Part1: Word formation. A noun. Israel. 81p.

Sheveleva, L.V. (2004). Lexicology of modern German. Moscow, 240 p.

Subich V.G., Mingazova N.G., Shangaraeva L.F. (2014). Gradability and intensification of the language quantity (on the materials of English, Russian and Japanese). *Life Sci J* 2014;11(6):574-578 (ISSN:1097-8135).

Yusupov, R.A. (1980). Lexico-phraseological means of Russian and Tatar. Kazan, P.133-141.